

**STANDARDS PRESENTATION  
TO  
CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD**

Attachment No. 1

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PROPOSED STATE STANDARD,  
TITLE 8, CHAPTER 4

Amend section 3482 as follows:

§ 3482. Bulk Storage of Loose Material.

(a) No employees shall be permitted to work on or over loose material, or attend an employee working on or over loose material, until they have been instructed in the hazards involved and the precautions that must be taken to prevent employees from being caught in caved-in material.

NOTE: Work in grain handling facilities shall be in accordance with the provisions of section 5178, Grain Handling Facilities.

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(c)(1) No employee shall be required or permitted to stand, climb, or walk upon piles of sand, sawdust, chips, gravel, fuel, seed, ~~grain~~ or similar granular or loose materials within bins, bunkers, hoppers, silos or other structures, unless a boatswain's chair or a Class III body harness with a line suspended from the hoist is used.

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(e) No employee shall be required or permitted to work or climb on piled, granular or free flowing (loose) material, such as but not limited to sand, sawdust, chips, gravel, fuel, or seed ~~or grain~~ piled on a level deck or on the ground, unless provision is made for safe access to and egress from the piled material and protection from engulfment/entrapment hazards is provided as described in Section 3482(b). Whenever possible, platforms or walkways shall be provided and employees shall be instructed to remain upon such platforms or walkways while working over loose material.

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NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code; and Section 18943(b), Health and Safety Code.

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Amend section 5161 as follows:

§ 5161. Definitions.

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Flat storage structure. A grain storage building or structure, that is not a confined space as defined by GISO section 5158, that will not empty completely by gravity, and that has an unrestricted ground level opening to permit entry to reclaim grain using powered equipment or manual means. Flat storage structures include flat bottom buildings where grain is stored on the floor or other structures where grain is stored in a pile in bulk on a flat bottom surface.

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NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

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Amend section 5178 as follows:

§ 5178. Grain Handling Facilities.

(a) Scope:

(1) This section ~~and section 5158~~ applies to all grain handling facilities, including grain elevators, flat outdoor storage and flat storage structures, feed mills, flour mills, rice mills, dust pelletizing plants, dry corn mills, soybean flaking operations, and the dry grinding operations of soy cake.

(2) For the purposes of this section, the term "grain" includes raw and processed grain, grain products, and cottonseed.

(3) This section contains requirements for the control of grain dust fires and explosions, and certain other safety hazards associated with grain handling facilities.

(4) ~~EXCEPTION:~~ This section does not apply to seed plants which handle and prepare seeds for planting and on farm or feedlot facilities.

(b) Entry into grain storage structures.

(1) ~~(a)~~ The employer shall either issue written authorization for entering bins, silos, ~~or~~ tanks or other confined spaces, or provide a qualified supervisor during the entire operation.

(A) The written authorization shall certify that the precautions contained in section 5158 have been implemented prior to employees entering confined spaces. The written authorization shall be maintained on file for inspection by the Division.

(2) ~~(b)~~ Prior to the entry of a confined space, the atmosphere ~~within a bin, silo or tank~~ shall be tested. If the oxygen content is less than 19.5 percent (%), or if combustible gas or vapor is detected in excess of 10% of the lower explosive limit, or if dangerous air contamination due to the toxicity of a substance is detected in excess of the limits prescribed by section 5158(b)(2)C, the requirements prescribed by section 5158 shall apply.

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(3) Prior to entering, all mechanical, electrical, hydraulic, and pneumatic equipment which presents a danger to employees inside grain storage structures shall be deenergized and shall be disconnected, locked-out, tagged-out, blocked-out, or otherwise prevented from operating by other equally effective means or methods as prescribed by GISO section 3314.

(4) "Walking down grain" and similar practices where an employee walks on grain to make it flow within or out from a grain storage structure, or where an employee is on moving grain, are prohibited.

(5) ~~(h)~~ Employees shall not be permitted to be either enter bins, silos, or tanks underneath a bridging condition, or in any other location where an accumulation a buildup of grain or grain products on the sides or elsewhere could fall and engulf the employee bury them.

(6) The employer shall equip the employee with a Class III body harness with lifeline, or a boatswain's chair, and a second employee shall be present when an employee enters a grain storage structure from a level at or above the level of the stored grain or grain products, or when an employee walks or stands on or in stored grain of a depth which poses an engulfment hazard.

(A) The lifeline shall be so positioned, and of sufficient length, to prevent the employee from sinking further than waist-deep in the grain.

EXCEPTIONS for subsection (b)(6):

1. Where the employer can demonstrate that the protection required by this subsection is not feasible or creates a greater hazard, the employer shall provide an alternative means of protection which is demonstrated to prevent the employee from sinking further than waist-deep in the grain.

2. When the employee is standing or walking on a surface which the employer demonstrates is free from engulfment hazards, the lifeline or alternative means may be disconnected or removed.

(7) The employer shall provide necessary equipment and qualified personnel for rescue operations.

(c) Hot work.

(1) The employer shall issue a permit for all hot work, with the following exceptions:

(A) In welding shops authorized by the employer;

(B) In hot work areas authorized by the employer which are located outside of the grain handling structure.

(2) The permit shall certify that the requirements contained in section 4848 have been implemented prior to beginning the hot work operations. The permit shall be kept on file until completion of the hot work operations.

(d) Housekeeping. The employer shall develop and implement a written housekeeping program that establishes the frequency and method(s) determined best to reduce accumulations of fugitive grain dust on ledges, floors, equipment, and other exposed surfaces.

(1) ~~(e)~~ The housekeeping program for grain elevators shall address fugitive grain dust accumulations at priority housekeeping areas.

(2) ~~(f)~~ Priority housekeeping areas shall include at least the following:

(A) Floor areas within 35 feet of inside bucket elevators;

(B) Floors of enclosed areas containing grinding equipment; and

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(C) Floors of enclosed areas containing grain dryers located inside the facility.

(3) ~~(2)~~ The employer shall immediately remove any grain dust accumulations whenever they exceed 1/8 inch (.32cm) at priority housekeeping areas.

EXCEPTION: Grain and product spills shall not be considered fugitive grain dust accumulations. However, the housekeeping program shall address the procedures for removing such spills from the work area.

(4) The use of compressed air to blow dust from ledges, walls, and other areas shall only be permitted when all machinery that presents an ignition source in the area is shut-down, and all other known potential ignition sources in the area are removed or controlled.

(e) Grate openings. Receiving-pit feed openings, such as truck or railcar receiving-pits, shall be covered by grates. The width of openings in the grates shall be a maximum of 2-1/2 inches (6.35 cm).

(f) Filter collectors.

(1) ~~(d)~~ Fabric dust filter collectors which are a part of a pneumatic dust collection system shall be equipped with ~~the~~ a monitoring device that will indicate a pressure drop across the surface of the filter.

(2) Filter collectors installed after [\*the effective date of this standard\*] shall be located:

(A) Outside the facility; or

(B) In an area inside the facility protected by an explosion suppression system; or

(C) In an area inside the facility that is separated from other areas of the facility by construction having at least a one hour fire-resistance rating, and which is adjacent to an exterior wall and vented to the outside. The vent and ductwork shall be designed to resist rupture due to deflagration.

(g) Preventive maintenance.

(1) The employer shall implement preventive maintenance procedures consisting of:

(A) Regularly scheduled inspections of at least the mechanical and safety control equipment associated with dryers, grain stream processing equipment, dust collection equipment including filter collectors, and bucket elevators;

(B) Lubrication and other appropriate maintenance in accordance with manufacturers' recommendations, or as determined necessary by prior operating records.

(2) The employer shall promptly correct dust collection systems which are malfunctioning or which are operating below designed efficiency. Additionally, the employer shall promptly correct, or remove from service, overheated bearings and slipping or misaligned belts associated with inside bucket elevators.

(3) The employer shall implement procedures in accordance with the provisions of GISO section 3314 for the use of tags and locks which will prevent the inadvertent application of energy or motion to equipment being repaired, serviced, or adjusted, which could result in employee injury.

(h) Grain stream processing equipment.

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Grain stream processing equipment (such as hammer mills, grinders, and pulverizers) shall be equipped with an effective means of removing ferrous material from the incoming grain stream.

(i) Continuous-flow bulk grain dryers.

(1) ~~(e)~~ By April 1, 1991, all All direct-heat grain dryers shall be equipped with the following automatic controls that will:

(A) ~~(1)~~ sShut-off the fuel supply in case of power or flame failure or interruption of air movement through the exhaust fan; and

(B) ~~(2)~~ sStop the grain from being fed into the dryer if excessive temperature occurs in the exhaust of the drying section.

(2) ~~(f)~~ Direct-heat grain dryers installed after July 5, 1990 ~~the effective date of these regulations~~, shall be located in one of the following areas:

(A) ~~(1)~~ oOutside the grain elevator; or

(B) ~~(2)~~ iInside the grain elevator protected by a fire or explosion suppression system; or

(C) ~~(3)~~ iInside the grain elevator separated from other areas of the facility by construction having at least a one hour fire-resistance rating.

(j) ~~(g)~~ Inside bucket elevators (bucket elevators).

(1) Bucket elevators shall not be jogged to free a choked leg.

(2) All belts and lagging purchased after July 5, 1990, ~~the effective date of these regulations~~ shall be conductive. Such belts shall have a surface electrical resistance not to exceed 300 megohms.

(3) ~~By April 1, 1991, all All bucket elevators shall be equipped with a means of access to the head pulley section to allow inspection of the head pulley, lagging, belt, and discharge throat of the elevator head. The boot section shall also be provided with a means of access for clean-out of the boot and for inspection of the boot, pulley, and belt.~~

(4) ~~By April 1, 1991, the employer shall~~ Bearings:

(A) ~~mount b~~ Bearings shall be mounted externally to the leg casing; or

(B) ~~provide v~~ Vibration monitoring, temperature monitoring or other means shall be provided to monitor the condition of bearings mounted inside or partially-inside the leg casing.

(5) ~~By April 1, 1991, the employer shall equip b~~ Bucket elevators shall be equipped with a motion detection device which will shut-down the bucket elevator when the belt speed is reduced by 20% of the normal operating speed.

(6) ~~By April 1, 1991, the employer shall~~ Belt alignment:

(A) ~~equip b~~ Bucket elevators shall be equipped with a belt alignment monitoring device which will initiate an alarm to employees when the belt is not tracking properly; or

(B) ~~provide a~~ A means shall be provided to keep the belt tracking properly, such as a system that provides constant alignment adjustment of belts.

(7) Subsections ~~(g)~~(j)(5) and (j)(6) of this section do not apply to grain elevators having permanent storage capacity of less than one million bushels, provided that daily visual inspection is made of bucket movement and tracking of the belt.

(8) Subsections ~~(g)~~(j)(4), (j)(5), and (j)(6) do not apply to the following:

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(A) ~~h~~ Bucket elevators which are equipped with an operational fire and explosion suppression system capable of protecting at least the head and boot section of the bucket elevator; or

(B) ~~h~~ Bucket elevators which are equipped with pneumatic or other dust control systems or methods that keep the dust concentration inside the bucket elevator at least 25% below the lower explosive limit at all times during operations.

~~(h) Employees shall not enter bins, silos, or tanks underneath a bridging condition, or where a buildup of grain products on the sides could fall and bury them.~~

(k) ~~(i)~~ Record keeping.

A certification record shall be maintained of each inspection performed in accordance with sections 3221(e), ~~and 3328(b), and 5178(g)~~ containing the date of the inspection, the name of the person who performed the inspection and identification of the equipment inspected.

(l) Contractors.

(1) The employer shall inform contractors performing work at the grain handling facility of known potential fire and explosion hazards related to the contractor's work and work area. The employer shall also inform contractors of the applicable safety rules of the facility.

(2) The employer shall explain the applicable provisions of the emergency action plan to contractors.

(m) Emergency escape.

(1) The employer shall provide at least two means of emergency escape from galleries (bin decks).

(2) The employer shall provide at least one means of emergency escape in tunnels of existing grain elevators.

(3) Tunnels in grain elevators constructed after [\*the effective date of this standard\*] shall be provided with at least two means of emergency escape.

(n) Training. In addition to the requirements of section 3203, employees shall be trained prior to starting work in a grain handling facility and annually thereafter in at least the following:

(1) General safety precautions associated with the facility, including recognition and preventive measures for the hazards related to dust accumulations and common ignition sources such as smoking; and,

(2) Specific procedures and safety practices applicable to their job tasks. Employees assigned special tasks, such as but not limited to, cleaning procedures for grinding equipment, clearing procedures for choked legs, housekeeping procedures, hot work procedures, preventive maintenance procedures, lockout/tagout procedures, confined space entry, and handling of flammable or toxic substances, shall be provided training to perform these tasks safely.

(3) Training for employees who enter grain storage structures or work on grain storage piles shall include instruction in the recognition of engulfment and mechanical hazards and how to avoid them.

(o) Emergency action plan. The employer shall develop and implement an emergency action plan in accordance with section 3220 of these Orders.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.